CAD

computer-aided design

Index to Volume 14 Numbers 1–6, pages 1–368 ISSN 0010–4485

SUBJECT INDEX

A
A lower cost graphics system for VLSI design, design rule checking and pattern generation 215
Algorithms for covering polygons by rectangles 257
Analysis of plane frames using a microcomputer 153
Analysis of tolerances and process inaccuracies in discrete part manufacturing 83
Application of dynamic programming to multi-stage batch machining 157
Application of the Bézier curve to data interpolation 55
Appraisal of building designs 45
Arc length parametrization 79
Architectural design 3, 11, 15, 19, 23, 27, 33, 39, 45, 49, 201, 271, 275, 335
Architecture 3, 97
A unified approach to shaft calculations using a microcomputer 167

B
B-splines 187
Batch machining 157
Beam calculations 167
Bernstein-Bézier curves 55
Bézier curves 55, 307, 345
Bézier technique 345

BOOKS AND PUBLICATIONS
Antognetti, P, Pederson, D and De Man, H Computer design aids for VLSI circuits 357
Bray, O H Distributed database management systems 284
Brayton, R and Spence, R Sensitivity and optimization 120
Brebbia, C A Finite element systems 120
Casonova, M A The concurrency control problem for database systems 172
Childs, J J Principles of numerical control 357
D.J.A.I. The last one 285
Deen, S M and Hammersley, P Databases 283
Encarnacao, J L, Torres, O F F and Warman, E A CAD/CAM as a basis for development of technology in developing nations 284
Flores, I Database architecture 171
Gunn, T G Computer applications in manufacturing 171
Hubbard, G U Computer-assisted data base design 173
Kung, H T, Sproull, B and Steele, G VLSI systems and computations 286
Ledgar, H, Singer, A and Whitside, J Directions in human factors for interactive systems 357
Mead, C and Conway, L Introduction to VLSI 172
Moschytz, G S and Horn, P Active filter design handbook for use with programmable pocket calculators and minicomputers 173
Ross, C T F and Johns, T Computer analysis of skeletal structures 172
Sata, T and Warman, E A Man-machine communication in CAD/CAM 283
Simons, G L Computers in engineering and manufacture 283

Bridges 195
Building analysis 19
Building analysis system – BAS 19
Building design 3, 11, 15, 19, 23, 27, 33, 39, 45, 49

C
C^1 surfaces 253
C^2 curves 137
CAD system 275, 321
CAD system development 321
Climatological database 11
COMPASS 161
Complexity 89
Computation of the dynamic thermal performance of buildings 49
Computational complexity 89
Computer simulation of wind flow around buildings 27
Computer-aided manufacturing 83, 261
Computer graphics 161

CONFERENCE REPORTS
CAD/CAM in Mechanical Engineering 126
CAD82 231, 288
Computer graphics '81 61
Design Engineering Show 61
Design of displays and terminals for the working environment (British Computer Society Displays Group) 288
Eurographics '81 125
Eurographics '82 359
Inscape '81 126
19th Design Automation Conference 290

Cubic patches 253
Cubic splines 55, 137

D
Data analysis 267
Data interpolation 55
Database 201
Degenerate Bézier tetrahedra 307
Design in logic 335
Design process 335
Design rule checking 215
Designing C^1 surfaces consisting of triangular cubic patches 253
Designers' requirements of a building design appraisal program using ESP as an example 45
Development 321
Development study of a small specialized CAD system 275
Digitized data 267
Dimensioning 209
Discrete part manufacturing 83
Drawing bridges by computer 195
Drawings 195, 321
Dynamic programming 141, 157
Dynamic programming interpretation of construction-type plant algorithms and some results 141
Dynamic thermal performance 49

E
Ease of use 329
Energy 3, 11, 15, 19, 23, 27, 33, 39, 45, 49
Energy program validation: conclusions of IEA annex 1 33
Enhancement of a graph drawing package 329
Ergonomic aspects of installing graphics CAD systems 161
Ergonomics 161
ESP 45
Evaluation 321
Evaluation procedures to be used during the development of CAD systems 321

F
Flats 275
Flexible models 209

G
GKS 221
Geometric modelling 209, 261
Geometry 345, 351
Graph drawing 329
Graphics standards 221

I
Implementing CAD 161
Installing CAD 161
Integrated circuits 215, 227, 257, 313
Integrated data system 11
Integrity of database 201
Interactive representation 187
Interactive smoothing of digital point data 267
Interactive surface representation system using a B-spline formulation with interpolation capability 187
International Energy Program 33
Interpolation 187

L
Layout 141
Lighting 145
Logic programming 97
Logic programming: a computing tool for the architect of the future 97
LOMACH 313

LOMACH – a MOS circuit mask checking logic simulator 313

M
Mask verification 313
Material removal processes 157
Mathematical logic 335
Matrix formulation 345
Matrix formulations of Bézier technique 345
Maintenance of integrity during concurrent access in a building design database 201
MICAD 257
Microcomputers 153, 167
Modification of geometric models through variational geometry 209
Monadic set operations 351
MOS circuits 313
Multiple criterion technique 145
Multiple criterion lighting design by computer 145

N
Non-linear circuits 227
Novice user 329
Numerical control 261
Numerical method for extracting arc length parameterization from parametric curves 79
Numerical methods 79

O
Operating system – UNIX 131
Optimization 271
Optimization of building systems 271
Overview of some available models for passive solar design 15

P
Parametric curves 79
Part manufacturing 83
Passive solar design 15
Pattern generation 215, 257
Plane frames 153
Planned further development of an integrated climatological data system for building energy modelling 11
Plant layout 141
Polygon coverage 257
Process inaccuracies 83

R
Reducing the effect of complexity on volume model evaluation 89
ROMAPT: a new link between CAD and CAM 261

S
Science Research Council 49
Set operators 351
Shaft calculations 167
SIMPLEPLOT 329
Simulation 227
Simulation of large nonlinear circuits 227
Simulation of wind flow 27
Smoothing 267
SNOB 275
Software techniques – logic programming 97
Solar design 15
Standards 221
Statics 167
Stereoscopic imaging 55
Subdivision algorithms 307
Surface modelling 187, 293
Surface patches 253
System implementation 215

T
The road to graphics standards 221
Thermal performance 49
Tolerances 83
Triangulation 253

U
UNIX 131
UNIX as a basis for CAD software 131
Using degenerate Bézier triangles and tetrahedra to subdivide Bézier curves 307

V
Validation of building model 39
Validation of buildings and systems energy prediction using real measurements 39
Validation of energy programs 33
Variational geometry 209
Visually C^2 cubic splines 137
VLSI 215
VLSI circuit simulation 227
Volume modelling 89

W
Wind flow 27
Work in progress: estimation of building energy use 23

3D modelling 89, 209, 351

AUTHOR INDEX

Barsky, B A and Greenberg, D P Interactive surface representation system using a B-spline formulation with interpolation capability 187
Butland, J and Butland, S D Enhancement of a graph drawing package 329
Butland, S D see Butland, J 329
Carter, D J Multiple criterion lighting design using a microcomputer 145
Chan, B T F ROMAPT: a new link between CAD and CAM 261
Chang, G Matrix formulations of Bézier technique 345
Cockroft, J P Validation of buildings and systems energy prediction using real measurements 39
Constantinou, S, Rathmill, K and Leonard, R Ergonomic aspects of installing graphics CAD systems 161
Constantinou, S, Leonard, R and Rathmill, K Evaluation procedures to be used during the development of CAD systems 321
Day, B Computation of the dynamic thermal performance of buildings 49
Edmondson, T H see Jennings, R M 215
Ellis, J A unified approach to shaft calculations using a microcomputer 167
Farin, G Designing C^1 surfaces consisting of triangular cubic patches 253
Farin, G Visually C^2 cubic splines 137
Goldman, R N Using degenerate Bézier triangles and tetrahedra to subdivide Bézier curves 307
Gossard, D see Light, R 209
Greenberg, D P see Barsky, B A 187
Grodzki, Z and Winiarski, M Development study of a small specialized CAD system 275
Hanson, T, Smith, F, Summers, D and Wilson, C B Computer simulation of wind flow around buildings 27
Harada, K and Nakamae, E Application of the Bézier curve to data interpolation 55
Hegedüs, A Algorithms for covering polygons by rectangles 257
Hoffman, P Analysis of tolerances and process inaccuracies in discrete part manufacturing 83
Hopgood, F R A The road to graphics standards 221
Irving, S J Energy program validation: conclusions of IEA annex 1 33
Jennings, R M and Edmondson, T H A lower cost graphics system for VLSI design, design rule checking and pattern generation 215
Katainen, A Monadic set operations 351
Kurth, W and Subramanian, N Analysis of plane frames using a microcomputer 153
Kutay, A R see Rasdorf, W J 201
Leonard, R see Constantinou, S 161, 321
Leśniak, Z K and Schwarz, H Optimization of building systems 271
Light, R and Rossard, D Modification of geometric models through variational geometry 209
Littler, J G F Overview of some available models for passive solar design 15
Lorenz, F Building analysis system – BAS 19
Márkusz, Z Design in logic 335
Moller, S K see Wooldridge, M J 23
Nakamae, E see Harada, K 55
Nichols, K G Simulation of large nonlinear circuits 227
Ouimet, D see Thalmann, D 195
Page, J K and Thompson, J L Planned further development of an integrated climatological data system for building energy 11
Quinlan, K M see Woodwark, J R 89
Rasdorf, W J and Kutay, A R Maintenance of integrity during concurrent access in a building design database 201
Rathmill, K see Constantinou, S 161, 321
Renz, W Interactive smoothing of digital point data 267
Rosenthal, D S H UNIX as a basis for CAD software 131
Roy, C see Thalmann, D 195
Schwarz, H see Leśniak, Z K 271
Sekhon, G S Application of dynamic programming to multi-stage batch machining 157
Sekhon, G S Dynamic programming interpretation of construction-type plant layout algorithms and some results 141
Sharpe, R J and Thorne, R W Numerical method for extracting an arc length parameterization from parametric curves 79
Sluce, A J A Designers' requirements of a building design appraisal program using ESP as an example 45
Smith, F see Hanson, T 27
Subramanian, N see Kurth, W 153
Summers, D see Hanson, T 27
Swinson, P S G Logic programming: a computing tool for the architect of the future 97
Szántó, L LOMACH – a MOS circuit mask checking logic simulator 313
Thalmann, D, Ouimet, D and Roy, C Drawing bridges by computer 195
Thompson, J L see Page, J K 11
Thorne, R W see Sharpe, R J 79
Wilson, C B see Hanson, T 27
Winiarski, M see Grodzki, Z 275
Woodward, J R and Quinlan, K M Reducing the effect of complexity on volume model evaluation 89
Wooldridge, M J and Moller, S K Work in progress: estimation of building energy use 23